

December 3, 2015

QUALITY MANAGEMENT PLAN

Corporate Quality Assurance
Quality Control Procedures
Management Procedures and Policies

ROUX ASSOCIATES, INC.

Environmental Consulting & Management



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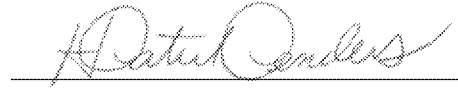
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FIGURES

1. Quality Management Organization Chart

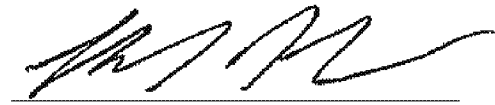
APPROVAL PAGE



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December 3, 2015

Date



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1.0 INTRODUCTION

This Quality Management Plan (QMP) provides a description of the corporate quality assurance / quality control (QA/QC) procedures, management procedures, and policies that are utilized by Roux Associates, Inc. and its associated corporate entities (hereafter referred to as Roux and/or Company) on a company-wide basis. This QMP is intended to specifically document how the Quality Management System at Roux is structured and implemented, and to provide a framework for continuous improvement. The goal of this QMP is to ensure that quality assurance goals are achieved and quality work products are consistently being produced. This document was prepared in general accordance with the United States Environmental Protection Agency (USEPA) Requirements for Quality Management Plans (EPA QA/R-2) (EPA, 2001) and the American National Standards Institute (ANSI) national consensus standard titled “Specifications and Guidelines for Environmental Data Collection and Environmental Technology Programs” (ANSI, 1994).

2.0 MANAGEMENT AND ORGANIZATION

Roux is a national environmental consulting and management firm. The firm provides complete environmental management services, including multimedia environmental investigations (e.g., soil, ground water surface water, sediments, air quality and soil vapor), remediation design and construction management, regulatory negotiations, litigation support/expert testimony, health and environmental compliance audits, water supply development, and industrial hygiene. Roux is involved with many high-visibility projects across the country, most of which are driven by Federal, State and local regulatory programs including transfer regulations. To effectively manage and implement our wide range of projects, Roux employs geologists, hydrogeologists, scientists, engineers, geochemists, toxicologists, industrial hygienists, computer modelers, database managers, and technicians.

2.1 Quality Assurance Policy

Roux is dedicated to providing quality service to our clients. Our reputation for providing quality services was earned by our over 30 years of service. Maintaining this reputation is each employee's primary responsible.

Roux's overall approach to quality is to thoroughly assess applicable regulatory requirements, along with understanding our client's specific needs, and subsequently developing and implementing a project strategy to satisfy these requirements in a timely and cost effective manner. We use periodic assessment and continual improvement techniques to enhance the effectiveness and efficiency of our systems and processes. This QMP affirms Roux's commitment to quality.

This QMP provides a framework for a consistent approach throughout Roux, while allowing the flexibility necessary to address specific client needs and regulatory requirements at the Federal, State, and local levels. Because Roux delivers a broad range of services across multiple industries, and regulatory programs, this QMP allows for quality processes and documents to be customized based on the type and complexity of the projects and products provided.

2.2 Company Structure and Organization

Company management structure (Figure 1) is comprised of the Board of Directors, Chairman, Chief Executive Officer (CEO)/President, Corporate Officers (i.e, Chief Operating Officer [COO], Chief Practice Area Officer [CPO], Chief Financial Officer [CFO], and Vice Presidents), Office Managers, Project Principals, Project Managers, Technical Staff, and other Support Staff including legal support, human resources and health and safety personnel. The Corporate Officers report to the CEO/President, the Office Managers report to the COO, and Practice Area (PA) leaders report to the CPO. The Technical and Support Staff within each office report to their respective Office Managers.

2.3 Roles, Responsibilities, and Authorities of the QA Manager and Staff

Direct client work is typically performed as individual projects managed by a Principal of the firm and the assigned Project Manager. Office Managers are responsible for assigning appropriate personnel to manage projects and Project Principals/Project Managers direct project activities under their purview. Each Project Manager is responsible for implementing the QMP on the projects he/she manages under the overall direction of the Project Principal.

Managers at all levels shall determine the skills and experience required for each job or task and shall assign qualified employees. Employee competency will be determined on the basis of documented education, training, skills, experience, and past performance. If needed to meet competency requirements, Roux will provide training to existing employees. Additional information regarding employee training at Roux is provided in Section 4.0.

A Corporate QA Manager is appointed by the CEO/President and is the steward of this QMP. He/she is responsible for implementing the QMP on a corporate basis. His/her responsibilities include:

- Developing and maintaining this QMP;
- Establishing, implementing, and maintaining quality processes;
- Reporting to the CEO, COO, and CPO regarding the QMP implementation, the overall quality performance of the Company and the need for improvement of the QMP; and
- Promoting awareness of the QMP throughout the organization.

The QA Manager reports to the CEO/President (Figure 1).

2.4 Programs Supported by the Quality System

Management of quality is important to all aspects of Roux's corporate structure. The technical services provided by Roux are divided into seven PAs, including:

- Brownfields / Due Diligence;
- Compliance Services;
- Ecological / Engineered Natural Systems;
- Industrial Services;
- Insurance Support;
- Litigation Support; and
- Petroleum / Energy.

Each PA has a designated PA leader. The PA leaders coordinate with the QA Manager to ensure that the QMP is being implemented across all projects within each PA.

Quality management is also important for corporate departments within the company, including Accounting, information technology (IT), Health and Safety and Legal departments. The QA Manager ensures that this QMP is being implemented across all departments and that applicable training on this QMP is provided to individual departments when required.

3.0 QUALITY SYSTEM COMPONENTS

All aspects of project quality control are the responsibility of the assigned Project Manager under the direction of the Project Principal. Quality control systems are to be applied to all areas of project work, including:

- Field Operations
- Sample Field Management
- Data Evaluation
- Technical Calculations
- Report Publication
- Technical Presentations
- Project Management and Administration
- Procurement/Subcontractor Management

Successful quality management of each control system involves several key elements which include: Project planning, establishing quality goals, determining work methods, performing and documenting work; checking, reviewing, and coordinating the work. This includes resolving any non-conforming items that are discovered.

To assure that these elements are effectively executed, the Project Manager must:

- Make all team members aware of the importance of quality;
- Train project staff in quality control methods;
- Verify that team members, subcontractors, and suppliers are aware of the specific procedures that apply to their work; and
- Personally audit project work for adherence to quality management requirements.

The remainder of this section describes the use of quality control plans, goals, and work methods to ensure that quality is maintained on all work tasks and products.

3.1 Project Quality Control Plans

Regardless of project size or type, Project Managers are required to maintain a quality control over the project. The Project Manager is responsible for either using this QMP together with the applicable Company Standard Operating Procedures (SOPs) as a standard quality control plan, or developing a customized plan to satisfy client requirements and other special project quality control needs. Adopting a customized quality control approach requires the review and approval by the Project Principal and may involve the input from the QA Manager.

3.2 Project Quality Goals

Project Managers are focused on two quality goals 1) Quality performance of the technical field Scope of Work (SOW) and 2) Preparation of quality documents/ physical deliverables. Each of the quality goals are further described below.

Completion of the Technical Field Scope of Work

Each task of the SOW shall be performed with quality assurance in mind. Employees shall consider the following goals when completing the work:

- Completeness and accuracy required to implement the field SOW; and
- Care taken in understanding and following SOPs in accomplishing field work.

Project managers are required to discuss the quality expectations of each SOW with their technical work team prior to the start of a project.

Physical Deliverables

Reports, presentations, and other deliverables should be prepared in accordance with the applicable Roux Company standards. Employees shall consider the following during preparation of deliverables:

- Thoroughness and accuracy of data evaluation, interpretation and reporting;
- Document appearance, including but not limited to, photocopies of field notebooks, calculation sheets, borehole logs, lab test reports or Roux technical reports from earlier projects;
- Deliverable completeness, typically based on written descriptions of the deliverables to be produced based on a set SOW; and

- Client specific considerations, including but not limited to, standardized language or regulatory requirements.

3.3 Work Methods and Procedures

Project Managers are responsible for seeing that all project technical work is performed according to the projects formal Work Plan/SOW and Quality Assurance Project Plan (QAPP), if applicable. The Work Plan defines the sequence of activities and commits the project to certain technical methods, safety requirements, and other procedures that have been approved by the client and the regulatory authorities.

Many of the work tasks typically performed by Roux have specific SOPs. The SOPs address specific activities (e.g. collecting environmental samples [groundwater, soil, soil vapor], keeping field records, overseeing drilling activities, operating various types of field equipment, conducting aquifer pump tests, etc.). Each SOP includes detailed step-by-step instructions for what is to be done for the specific task. SOPs are stored within a central location on the company network and available for all employees. At the start of each project, Project Managers should brief team members as to which SOPs apply to the Work Plan. SOPs should be used in conjunction with regulatory procedures and other state and local requirements that may govern the SOW.

It may occur that an SOP has not yet been written for a particular activity. In this instance, the Project Manager should evaluate the need for new project-specific SOP. If required the Project Manager should have it developed and approved by the Project Principal, and then use it to guide work on the project.

It may also occur that in conducting a field task, a way to improve an existing SOP is discovered. It is the Project Manager's responsibility to develop a modification to the SOP and have the modification approved by the Project Principal. The Project Manager should then submit the modification, along with a description of why it was needed, to the QA Manager. Revised SOPs will be published to the company-wide directory and the most recent revision date will be included on each SOP that is revised.

3.4 Documenting Work

Project Managers are responsible for having all project work performed in accordance with the quality goals and by way of the appropriate work methods. Work performance must be fully documented by the person who does it, and by all reviewers.

The following specific work documentation requirements apply to all projects. Work document requirements may also be described in SOPs for specific tasks and should be referred to during preparation of work documentation.

- Documents: All work must be legible and in a form suitable for reproduction, filing and retrieval. Documentation must be easily traceable to its originator, and must be sufficient to allow a technically qualified individual to understand the work and verify the results. All documents that are considered work in progress should be clearly labeled as “Draft”. All documents that are completed under attorney-client privileges should be labeled with appropriate language as requested by the legal entity.
- Data/Calculations: As work proceeds, it is essential to verify that data used in calculations contain the latest, appropriate, and correct information. Calculations are to include an introduction that gives the intent, methodology, and results of the work. References and/or sources of information should be included with all calculations.
- Computer Simulations: Final outputs generated from non-routine computer software must include information as to the originator, project, date, revision number, software, and details on any specific calculations that will be used for project decisions. Additional documentation must be provided to thoroughly explain any new program used for the first time.
- References: Various published and un-published documents may provide data, technical methodology, or legal requirements for the work. These are to be identified clearly in all work documents, including sufficient information for others to easily find the references later. When possible, specific page numbers should be cited where the key material appears in the reference. Copies of any reference charts that are marked and used directly in calculations should be kept with the project files.
- Reports: Reports are to clearly indicate the project for which they were prepared, the revision number, date, and purpose of issue, the originator. All reports that are considered work in progress should be clearly labeled as “Draft”. All documents that are completed under attorney-client privileges should be labeled with appropriate language as requested by the legal entity.

- Drawings and Figures: All pictorial representations of data, calculation results, or designs must appear on Company standard drawing or report figure sheets. Drawings are to include a title block that features the Company name, logo, Roux Associates project name and job number, client name and project number, drawing number, and both a technical and Project Manager sign-off.

Following the approach used in the construction industry, engineering drawings used outside the Company are to show a complete history of the issued revisions in their title blocks. Items changed in each current revision are highlighted by circling and tagging.

Figures are to include a title, figure number, revision code, and date and project identifier (e.g., the Roux Associates' project number).

Specifications: Specifications are written in the form of a specifications book in Construction Standards Institute (CSI) format. These specifications have a cover sheet with general project information. Revisions are typically provided as redline revisions or addendums.

Specifications used outside the Company are to show a complete history of the issued revisions in their title blocks (i.e., on the cover sheet). Each current revision should be highlighted by marginal bars and revision tags.

Purchasing Documents: Purchase orders and work authorizations, and revisions to these items, are to include the vendor or subcontractor name, Company name, Roux Associates project name and project number, client name and its project number (if any), and date and purpose of issue. Work authorizations providing subcontractors the approval to perform work on behalf of Roux are required to be signed by an Officer of the firm as described in Section 5.0 which documents procurement procedures.

3.5 Check / Review / Coordinate Work

The Project Manager is responsible for seeing that all technical work undergoes the appropriate checks, reviews, and coordination before it leaves the originator and is used by the project team, or is issued formally for use by the client or others outside of the Company. It is also the Project Manager's responsibility to ensure that all checks, reviews, and coordination are properly documented in the project file.

- *Checking* refers to a detailed consideration of all data, methods, and results of the work.
- *Reviewing* can include checking, but also features a sensitivity toward project, Company, client and professional issues that may be involved with the work.

- *Coordination* is a type of review that refers to the examination of the work by other team members for verifying that it is compatible with their parts of the project (i.e., areas beyond the responsibility of the originator).

Checking and professional reviewing are to be performed by persons with experience equal to or greater than that of the originator. Coordination is performed by project team members from other disciplines, with an experience level sufficient to judge the impact of the work on their areas of responsibility.

Checks, reviews, and coordination must be documented, indicating who did the check, review or coordination, and the date. In general, all three include:

- Assignment of the check/review/coordination to someone;
- Agreement as to a completion date;
- Designation by the Project Manager as to what kind of check/review is expected (e.g., do an independent or parallel calculation, review assumptions only, review input only, review arithmetic, review results only, etc.);
- Access to all data that were available to the originator;
- Highlighting each area of the work that may be in question using a highlighter and/or single-line strike through for hard-copy documents, or red-line strikeouts for digital review; and
- Discussion and resolution of all areas believed to be in error.

Document copies circulated to checkers and reviewers are to be kept in the project file until such time as the final results are formally accepted and the final work product is issued.

4.0 PERSONNEL QUALIFICATION AND TRAINING

Project Managers shall determine the skills and experience required for each job or task and shall assign qualified employees. Employee competency will be determined on the basis of documented education, training, skills, experience, and past performance. If needed to meet competency requirements, Roux will provide training to existing employees or take other actions to ensure that the work is properly performed. The remainder of this section describes the procedures for initial training of new employees and ongoing training for experienced employees.

4.1 Short Service Employee Procedure

A Short Service Employee (SSE) is defined as a Roux employee or a Roux subcontractor employee with less than six (6) months continuous service in the same job type or less than six (6) months continuous service with his/her current employer. Roux has a corporate policy and procedure to ensure that Roux and Subcontractor SSEs are properly trained in the needed H&S programs identified, appropriately supervised, trained, and managed in order to prevent accidents such as personal injury, injury to others, environmental damage, or property damage. The SSE policy is a requirement for all employees and subcontractors throughout the firm.

The SSE process ensures that appropriately trained employees that are familiar with quality assurance protocols are present at all Roux work sites. The SSE policy states that SSEs shall not exceed 50% of Roux's workforce at any job site without prior written approval from the Office Manager and, when required by client contract or policy, approval from the designated client representative.

Each employee that is a SSE is assigned an SSE Mentor. A Mentor is a designated person(s) who is responsible and accountable for guiding and monitoring performance of SSEs in the field. The Mentor cannot be another SSE. The Mentor has demonstrated knowledge and skills with regard to site and task-related hazards, hazard management, and safe working practices and is able to communicate with the SSE. The Mentor should have a positive safety attitude and understanding of Roux's corporate safety cultures. The Mentor should be capable of practicing Safety Leadership skills, but does not necessarily have to be the SSE's direct Supervisor.

The Mentor should have received appropriate technical training and be qualified for the role by the Office Manager and Healthy and Safety Manager.

The SSE process excludes workers not performing physical work onsite, visitors, regulatory agency staff, client employees or affiliates, and members of contractor management staff. In addition, certain elements of this SSE process may not be appropriate for short-duration workers (i.e., specialized workers onsite for a short period of time to perform a very specific task and unlikely to return). If the SSE process is deemed not appropriate, the individual Project Manager will develop a case-specific risk mitigation plan to address these short duration workers or consider subcontracting the task through a long-duration contractor who has an effective SSE policy.

4.2 Employee Training Programs

Roux conducts routine in-house training sessions to ensure that all employees are trained on applicable Roux field and safety procedures. Trainings are conducted by knowledgeable employees that have demonstrated proficiency in the training topics. Training sessions are typically conducted monthly and training attendance is documented within each office's training/safety database. Training presentations are made available for review by employees.

Roux is committed to staying up-to-date with industry standards and codes. It is important to Roux that personnel maintain quality-related competencies, including continuing education or refresher training. In addition to in-house training, Roux employees attend trade shows, conferences, and technical trainings applicable to the technical work commonly being completed within the company and the industry.

5.0 PROCUREMENT OF ITEMS AND SERVICES

Roux routinely procures and manages subcontractors at the request of our clients. Roux also routinely procures goods and services from specialized vendors. The control of procurement is imperative to ensure our clients receive quality results and services for every project. The remainder of this section describes the procurement controls and methods implemented by Roux.

5.1 Procurement Documents

Roux routinely procures the following subcontractors on behalf of our clients:

- Drilling services;
- Laboratory services;
- Surveying services;
- Construction/excavation oversight services;
- Specialty testing, monitoring, engineering and consulting services; and
- Data validation services.

Procurement of subcontractors is controlled through the issuing of procurement documents, including: subcontractor agreements (Contracts), bid requests, purchase orders, and work authorizations.

Contracts are legal documents that memorialize general work agreements, insurance requirements, and client specific requirements between Roux and a subcontractor. Contracts are stored in the Roux legal database. Additional information regarding Contract content and approval are provided in the sections below.

Once a contract is agreed upon between Roux and the subcontractor, a subcontractor can be issued a work authorization letter (WAL). The WAL is used to memorialize a specific SOW, for a specific project, at a specific cost. Each time a subcontractor is used, a WAL must be issued. Executed WALs are stored in the Roux legal database. Additional information regarding WAL content and approval are provided in the sections below.

Bid documents are used to ensure that subcontractors understand and provide costs for the exact SOW that is requested by Roux and our clients. Bid documents are not issued for each SOW; however, Roux typically solicits cost proposals from multiple subcontractors (if possible) for similar SOW to ensure that costs are controlled. Bid documents are typically kept with the project files for review by the project team.

In addition to the use of subcontractors, Roux utilizes a wide network of vendors to procure materials for use on projects. Vendors may provide equipment used for environmental testing and monitoring, equipment for remediation systems, tools for operations and maintenance, and other client requested items. For larger projects, Roux utilizes a PO system that allows vendor purchases to be authorized by the Project Manager and tracked as part of the accounting processes.

5.2 Procurement Document Content

The following section describes the typical content that is present in procurement documents.

5.2.1 Contracts

Contracts include language that states the general requirements of Roux's subcontractors. Contracts may include, but are not limited to, the following information:

- Discussion and requirements regarding performance of the work;
- Payment terms;
- Insurance terms; and
- Safety requirements.

Contracts often contain pass through requirements from the client at the request of Roux's clients. Roux has developed a standard contract that may cover typical Subcontractor work. However, the standard contract may be modified at the request of the Subcontractor.

5.2.2 Work Authorization Letters

WALs contain detailed information regarding expectations for individual project work scopes.

WALs may include, but are not limited to, the following information:

- General requirements of the SOW;
- Pertinent codes and standards;
- References to drawings / specifications / regulations;
- Material composition and/or physical and chemical requirements;
- Quantity and scheduling requirements;
- Work procedures;
- Testing and calibration requirements; and
- Performance and/or accept/reject criteria.

WALs often contain specific language that reinforces client specific requirements.

5.2.3 Bid Documents

Bid documents are utilized to obtain competitive cost proposals for a SOW. Bid documents may take on multiple formats and may contain, but are not limited to:

- prescribed bid form;
- written description that describes the SOW;
- engineering drawings and specifications;
- federal, state and local guidance requirements;
- schedule and time lines;
- price breakdowns; and
- client specific requirements.

5.2.4 Purchase Orders

Purchase orders document vendor information including name, address, contact information, payment terms, and associated Roux project number. Purchase orders also contain shipping

information for the item/s being purchased. Each purchase order contains a unique number that allows for tracking within the Roux accounting system and reference by the vendor.

5.3 Procurement Document Review and Approval

Procurement documents shall be reviewed to assure that applicable Roux, regulatory, and client requirements (performance, quality, acceptability, and documentation) have been incorporated. The reviews shall also assure that any changes in the documents, as a result of bid evaluations or pre-contract negotiations, have been made. Reviews and appropriate approvals of procurement documents shall be performed prior to their release. Each Subcontractor Contract must be approved and signed by an officer of the company (Figure 1). WAL's must be signed by an officer of the company (Figure 1) prior to being submitted to the Subcontractor and work beginning.

Bid documents must be reviewed by individuals qualified to evaluate technical considerations, quality and documentation requirements. Bids not accompanied by all the required documentation are considered incomplete bids, and may be rejected.

5.4 Subcontractor Procurement Evaluation and Selection

Procurement source evaluation is performed to determine subcontractor capability. The evaluation shall include any or all of the following.

- Subcontractor's history and any previous Roux experience with the subcontractor;
- Subcontractor's current records (qualitative and quantitative information);
- Subcontractor's technical and quality capabilities through the performance of a formal prequalification audit of their facilities; and
- Vetting of the Subcontractor personnel to review the qualifications of the assigned staff to the project.

In addition to the evaluation of Subcontractors performed in-house, Roux utilizes a third-party subcontractor qualification service called Browztm. Roux asks that all subcontractors register for the Browztm service and submit the required documentation (i.e., safety and insurance information) before the start of a project. The information is reviewed by Roux as a way to screen subcontractor qualifications and verify the subcontractors meet the requirements of the

Contract. The overall goal of the Browztm service is to ensure that Roux and our clients are working with safe, qualified, and socially responsible subcontractors.

Roux is committed to providing a safe work place for all of its clients, employees, subcontractors and throughout its operations as whole. As part of the Browztm requirement, subcontractors are required to submit historical safety statistics including Lost Time Injury/Illness Rate (LTIR), Total Recordable Injury/Illness Rate (TRIR), and Experience Modification Ratio (EMR). Roux reviews this information to confirm that the subcontractor has a safety record that meets the expectations of Roux management.

5.5 Subcontractor Performance Verification

To verify Subcontractor conformance to procurement document requirements, Roux shall, as necessary, perform field quality control checks, review Subcontractor prepared documentation, and perform audits as described in Section 9.0.

For field operations, Roux project personnel shall perform a quality control check of a subcontractor prior to commencing work. The intention of this check is to perform vetting of the subcontractor to assure that the Subcontractor has fulfilled the procurement requirements necessary to begin their activities. The check shall include the type and condition of equipment, calibration of equipment, and qualifications of personnel. Calibration documentation and personal resumes shall be made available to Roux during the quality control check if necessary. Interviews of the Subcontractor personnel may be conducted prior to mobilization. If requirements are not met during the vetting process, sufficient grounds for suspension of activities exist. Equipment which does not meet Roux and project requirements shall not be used without repair to the satisfaction of Roux.

6.0 DOCUMENTS AND RECORDS

Maintaining quality documents and records is important to Roux and our clients. This section describes the document and records management process, including a description of the procedures, roles and responsibilities that are part of the records management at Roux.

6.1 Documents and Records Requiring Control

A record is any storage of information, regardless of whether the medium of storage is hard copy or electronic and regardless of whether the record is formal or informal, final or draft, original or a copy, published or proprietary, held in internal or external environments. A record is:

- Any writing, whether printed, typed, or handwritten;
- Any electronic communication such as e-mail, instant / text message, any scanned / photographed / filmed image, any physical sample such as core / rock / soil, any visual recording, any sound / voice recording, any tape, disk or other electronic or magnetic recording; or
- Any other tangible preservation of information including application data within databases or within applications such as MS Word, PowerPoint, Outlook, etc.

Records can be divided into two categories – controlled or discretionary. Controlled records are those for which the primary copy must be retained for defined periods of time and then can be destroyed when the retention periods are met. Controlled records may include, but are not limited to, invoices, procurement documents, final project reports, and project specific data. Discretionary records are of relatively temporary usefulness and do not have defined retention periods. Discretionary records are not intended for long-term storage. Some examples of discretionary records are routine internal and external correspondence such as memoranda, notes and letters whether formal or informal, and drafts or works-in-progress.

All documents and records at Roux require control. The majority of data and reports are controlled electronically underneath the Roux IT policy (described in Section 7.0). Hardcopy records, when required, are managed at each office.

6.2 Document / Record Preparation and Review

All documents and records are prepared on a project by project basis by technical personnel that are familiar with the project and the specific SOW. The technical personnel assigned to develop the document and/or record should be assigned by the Project Principal and Project Manager.

Any document or record that is submitted to a client and/or regulatory agency will undergo at least one level of technical review as directed by the Project Principal. During the technical review, it should be verified that records and documents accurately reflect the completed work. During the technical review, it is verified that all documents comply with applicable statutory and regulatory requirements for documents and records. Any comments that are provided during the technical review should result in revision of the document / record prior to final submittal.

6.3 Maintaining Documents and Records

The life cycle of a record encompasses creation, use / collaboration, preservation and eventual deletion / destruction. With each change in status, records may change storage locations and potentially their custodianship. Within Roux, there are multiple types of record repositories, each with a specific purpose. Security requirements and access controls may vary for all record repositories.

6.3.1 Repositories and Custodianship

Records may be stored in the following locations:

Shared Files/Collaboration Areas:

Description	Repository Purpose	Custodian
Physical: Shared cabinets or shelving located in each Roux Office Electronic: Computing environments shared by groups or departments. Examples include: shared drives, and Company-wide SharePoint.	Active files that require frequent sharing and collaboration by the department or business unit. May contain either discretionary or controlled records.	Physical: Project Managers and Office Managers Electronic: Project Managers, Office Managers, and IT Manager

Individual Files/Individual Storage:

Description	Repository Purpose	Custodian
Physical: Drawers, cabinets or pedestals in an individual office or workstation. Electronic: E-mail application, removable / peripheral media or network drives available to individuals.	Working drafts or works in progress. Materials required for reference for some reasonable duration. Typically not for long term storage, and should not be used for long-term storage of controlled records. Extensive personal storage of either paper or electronic records is not encouraged. Electronic documents on the network and e-mail folder are subject to deletion if not applicable to a project. Typically personnel should not store records on removable / peripheral media in their personal possession.	Physical and Electronic: Individual personnel.

Off-Site Storage/Electronic Archives:

Description	Repository Purpose	Custodian
Physical: Warehouse facility for longer term storage, managed by third-party provider specializing in records management. Electronic: Limited access off-line repository for longer term storage.	Primarily controlled records that have become inactive, but whose retention periods have not expired. Typically have not been referenced in the past year or are in applications that are retired. Storage of discretionary records should rarely occur and requires valid business justification for storage as well as a review date for reassessment.	Physical: Project Managers and Office Managers Electronic: Project Managers, Office Managers, and IT Manager.

6.3.2 Document and Record Retention

One copy of all final documents submitted by Roux to a client or regulatory agency is maintained in a central digital repository. Archiving of the digital repository occurs at a minimum daily. All other project files for completed projects will be retained for seven years from the date of completion of the project, unless a longer period is required by the client. A completed project refers to completion of all work at a site, not the completion of individual phases or tasks.

Systematic review and appropriate deletion are integral components of a record's life cycle and are essential for maintaining the integrity of records management. Hardcopy documents no longer subject to retention should be destroyed. The preferred method of destruction of hard copy records is shredding. Every effort should be made to render the records irrecoverable, so that information cannot be read or reconstructed. All draft documents that are not subject to retention should be destroyed when no longer needed for project work. Project files for completed projects are not to be placed in offsite storage or discarded without specific approval from the Office Manager.

6.4 Chain of Custody and Confidentiality Procedures for Evidentiary Records

Evidentiary records are those records that may be used as admissible circumstances in a legal case. Evidentiary records may include admitted testimony, corroboration, documentation with evidentiary value, documents which play a role in a trial, documents which tend to prove the outcome, exhibits, exhibits submitted to jury, facts admitted, facts judicially noted, facts proving the outcome of a trial, facts which bear on the point in question and facts which establish the point in issue.

Evidentiary records produced by Roux are subject to the chain of custody and retention policies outlined by the legal matter at hand. Upon resolution of a case, the client (or law firm) will be notified that the files (except for final reports) will be discarded, unless they require retention for a specific period (e.g., finalization of settlement, appeal, etc.). Unless specifically requested otherwise by the client, the files will be discarded.

7.0 COMPUTER HARDWARE AND SOFTWARE

This section provides a description of Roux's IT Policy and how Roux utilizes computer hardware and software to satisfy quality requirements.

7.1 IT Policy

Roux employees are provided technology resources and granted network access to assist in the performance of their job functions. Technology resources include, but are not limited to, desktop computers, laptop computers, cell phones, tablet computers and various technical software (hereinafter referred to as "Technology Resources"). Corporate network access includes, but is not limited to, connectivity to the internal Roux network, internet, or other online service (hereinafter referred to as "network access"). Roux provides technology resources and network access to its employees, and has various interests in maintaining the integrity and confidentiality of electronically conveyed, produced and/or stored information and preventing abuse thereof. Accordingly, Roux has a formal IT policy that serves as an overarching policy to encompass and to address each of these interests.

The IT Policy includes the following seven (7) policies:

1. Acceptable Use Policy;
2. Information Classification Policy;
3. Confidential Information Policy;
4. Password Policy;
5. Remote Access Policy;
6. Mobile Device and Media Policy; and
7. Information Retention and Archiving Policy.

Adherence to these policies work to ensure that data quality is maintained and that data is utilized appropriately throughout work scopes. These policies also help establish the appropriate use of IT hardware and software to produce data that meets the technical and quality directives required. The IT policy is governed by Roux's IT department and the IT manager has ultimate responsibility for the IT program.

7.2 Hardware

Roux Associates has an ongoing program of purchasing new computers on an annual basis such that approximately 25% of corporate computers are upgraded or replaced annually. Replacing computer hardware ensures that quality performance is maintained throughout the company as a whole. In certain cases, additional computer hardware may be purchased on a project specific basis to satisfy the technical requirements of that project. All requests for new hardware are made through an online request system which allows the user to provide information that documents the technical reason for the request, the level of importance, and the impact on the user and/or group of employees. All purchased hardware is evaluated by Roux's IT department. If any hardware is determined to be unusable or unable to perform at a quality level, it is replaced.

7.3 Software

Roux Associates purchases and maintains corporate licenses for off-the-shelf software to meet its IT needs. All requests for new software are made through an online request system which allows the user to provide information that documents the technical reason for the request, the level of importance, and the impact on the user and/or group of employees.

All purchased software is evaluated and tested by Roux's IT department prior to use to ensure that quality data will be produced. If any software is determined to be unusable or unable to perform at a quality level, it is replaced.

In addition to software used for technical analysis, Roux Associates' IT staff maintains a corporate intranet, website, email accounts, servers, and other systems to allow staff to operate in a manner that meets our client's needs and produces quality data for making technical decisions.

8.0 PLANNING AND IMPLEMENTATION OF WORK PROCESSES

This section describes how individual data operations will be planned and implemented within the organization to ensure that data or information collected are of the expected quality for their desired use.

8.1 Planning

All work performed for clients shall be carefully planned in a manner that focuses on client requirements and needs. The purpose of the plan is to accurately define and document project objectives, data requirements, data quality objectives, and work activities that are technically sound and achievable.

Planning is an ongoing process that begins with a proposal and contracting and continues through project completion. As changes occur during the course of a project, plans will be modified as needed.

Project plans shall consider the following:

- Client requirements and expectations;
- Applicable regulations and industry standards;
- The type, quantity, and quality of data needed for decisions, regulatory-driven reporting, remedial designs, or other necessary activities;
- A description of how, when, and where the data will be obtained; and
- Required approvals, permits, notifications, licenses and/or professional registrations.

During the planning stages, Project Managers should consider personnel qualification requirements and assign personnel according to such requirements. Assigned personnel shall be provided with and shall use plans, technical standards, instructions, procedures, and drawings that are appropriate to plan the project. Project managers should engage all stakeholders in the start of the planning process.

As part of the planning process, Project Managers should evaluate resources (including budgets) and applicable regulatory and contractual requirements. Project schedules and milestones should be developed based on these requirements.

During planning, performance criteria should be developed through which the quality of the work can be evaluated. For the collection of environmental data, specific performance criteria is often developed in project specific quality assurance quality control plans (QAPPs).

8.2 Implementation of Work Processes

All work plans should be implemented with the goal of ensuring data collected is of the expected quality for their desired use. Employees shall document work to demonstrate conformance to requirements and to provide a record of work status, as appropriate, for the work being performed. Any documentation of work process, including field notes, correspondence, photographs, etc., should be stored in the project files, preferably in electronic format and should be retained in accordance with the guidelines described in Section 7.0. It is the individual Project Managers responsibility to ensure that work is performed according to the plan and technical requirements.

Implementation of a work plan may require that Roux employees oversee the work of Subcontractors. Work completed by Subcontractors should be documented in field notebooks and stored with the project files. Some projects may require the documentation of work progress on daily construction oversight forms, which should also be stored with the project files and retained in accordance with the guidelines described in Section 7.0.

Upon project completion, work products shall be delivered or completion of work should be demonstrated, as required by Contracts or in agreement with clients. It is the responsibility of the Project Principal to approve all final work products before final submittal or release of data. Written work products should be completed in accordance with the Roux standards discussed in Section 4.5.

9.0 QUALITY ASSESSMENT AND RESPONSE

This Section describes the procedures and policies in place to assess quality of work and provide a response when necessary.

9.1 Quality Assurance Audits

The QA Manager and Project Managers may audit work activities to verify compliance with QA/QC requirements. Audits, if conducted, shall be performed by experienced staff and, as appropriate, technical specialists. The individuals performing the audits should be able to identify best practices and quality problems, if any. The individuals should have no real or perceived conflict of interest, and have no direct involvement or responsibility for the work being assessed.

Audits may include the following activities:

- subcontractor capabilities and performance;
- field operations and records;
- laboratory testing and records;
- equipment calibration and records;
- identification and control of samples;
- data reduction and analyses;
- computer program documentation and verification; and
- record control and retention.

9.2 Audit Types

Several different types of audits may be conducted based on the needs of a project. The audits may be internal or external to Roux. The following sections describe the various audit types and scenarios where the audit may be applicable.

9.2.1 Field Operations Audits

A field operations audit involves an onsite visit by designated staff that is technically competent in the operations to be audited and independent of the project staff. Items to be examined may, as

appropriate, include the availability and implementation of approved work procedures, calibration, and operation of equipment, labeling, packaging, storage, and shipping of samples obtained, performance documentation and checking, subcontractor performance, and variance documentation. At the request of the auditors, subcontractor calibration records and personnel resumes shall be furnished.

9.2.2 Laboratory Subcontractor Audits

Laboratory Subcontractor audits will usually be project specific. Items examined during a laboratory audit may include, as appropriate, the availability and implementation of approved laboratory procedures, equipment calibration and records, control and storage of samples, certification of technicians, performance documentation and checking, and variance documentation. Laboratory audits will be conducted as deemed necessary by the QA Manager in coordination with the Project Manager and Project Principal, or as contractually required. In addition, laboratory audits may be required as part of project specific QA/QC procedures outlined in project-specific QAPPs.

9.2.3 Peer Review Audits

A peer review audit may be completed by a technical individual that is specialized in a specific work scope or technology. A peer reviewer is responsible for ensuring that the technical aspects of the work are in accordance with established technical standards and that the work being done meets the project SOW and objectives. The peer reviewer does not have operational control to get the work done. This person, however, acts over the duration of the project to ensure that technical work is done properly. The peer reviewer should be, if possible, a senior level technical advisor or equivalent.

Additionally, Roux has a formal detailed corporate peer review program in place specifically for engineering design projects to ensure the quality of engineering designs and associated deliverables. This corporate program outlines the formal engineering peer review process, including all elements that should be addressed in the design review and all follow up documentation that should be completed. Engineering design projects are selected for the formal peer review process based on several criteria, including the overall cost and complexity of the design and project.

9.2.4 Project File Audits

In general, the maintenance and control of project records shall be reviewed as part of project and report audits. However, for individual jobs having long periods of inactivity (greater than six months) or at the request of clients, the project files may be audited separately.

The primary concern of such an audit is that all project material, such as correspondence, memorandums, field and laboratory data, computer output, calculations, figures, and reports, is maintained as part of the project files and in accordance with the document retention policies.

9.3 Audit Reports and Responses

Following completion of an audit, the auditor may prepare and submit a post audit report to one or more of the following personnel: QA Manager, Project Manager, Project Principal, and Office Managerd. The report may also be sent to individuals contacted during the audit and the members of the audit team.

Audit reports should identify when corrective actions are to be taken in response to the findings of the assessment. Corrective actions are those actions taken to remedy a non-compliance issue and improve the quality of work products. The findings of audits should document the root cause of the necessary corrective action, the determination of whether the problem is unique or has more generic implications, and recommendation of procedures to prevent recurrence. Corrective actions should be made promptly and should be reviewed to ensure that the non-compliance issues have been resolved as a result of the corrective action.

10.0 CONTINUOUS IMPROVEMENT

The final part of the quality management cycle is assuring that the actions taken to assess and correct deficiencies in the system are continuously fed back into the planning process to change and improve the system and its outputs. Continuous process improvement is a core practice at Roux and regular sharing of the assessment and corrective action process allows continuous improvement to occur.

Overall, roles and responsibilities for continuous quality improvement break down as follows:

- At the project specific level, employees report quality problems/issues to their Project Managers. The Project Managers may report to the Project Principal, Office Managers and QA Manager. Problems with immediate solutions should be resolved in an appropriate and timely fashion. Complex corrective actions may require additional time and should be discussed between the QA Manager, Office Manager and the Project Principal. All problems and corrective actions must be documented and tracked until the corrective actions are completed.
- On a company wide basis, Practice area leaders review and assess the quality of their programs annually, and report in writing to the QA Manager. Areas for improvement are discussed during practice area meetings and may be provided formally in memos to the project teams.
- The QA Manager and other qualified staff conduct formal program audits on a sampling of projects to assess the functioning of the quality system. Results of the audits may be shared at monthly meetings, via the Roux network, or via email correspondence.

The overall goal at all steps of this continuous improvement process is to anticipate and prevent quality problems from arising wherever possible, and otherwise identify and correct them as quickly as possible.



Roux Associates, Inc.

Company Organization

